

WHAT IS CLAIMED IS:

1. A method for identifying a fungicide comprising assaying a candidate compound in a 20S-proteasome inhibition assay and determining whether said candidate compound is a fungicide based upon said assay.
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2. The method according to Claim 1, wherein 20S proteasomes from fungi are used in said assay.
- 10 3. The method according to Claims 1 or 2, further comprising the step of checking the fungicidal action of the candidate compound identified as a fungicide according to Claim 1 on fungi in an *in-vivo* assay.
- 15 4. A method for isolating 20S proteasomes from one or more eukaryotic cells, comprising
 - a) providing a eukaryotic cell suspension and disrupting one or more eukaryotic cells in said suspension,
 - b) heating the cell suspension from 50°C to 70°C, until temperature-sensitive components of said cell suspension have precipitated as insoluble components, and
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 - c) recovering the 20S proteasomes from said cell suspension by removing said insoluble components by means of centrifugation.
- 25 5. The method according to Claim 4, wherein the cell suspension is heated at from 55°C to 65°C for 20 to 75 minutes.

6. A method for identifying inhibitors of 26S and/or 20S proteasomes by assaying a candidate compound in an inhibition assay for 20S proteasomes, comprising
- 5 a) contacting said candidate compound with 20S proteasomes in the presence of a substrate and in the presence of from 2 to 10% (v/v) dimethyl sulphoxide, and
- b) selecting those candidate compounds which specifically inhibit an enzymic conversion of the substrate by the 20S proteasome.
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7. The method according to Claim 6, wherein the substrate comprises a group whose liberation by an enzymic activity of the 20S proteasome can be detected fluorimetrically or colorimetrically.
- 15 8. The method according to either of Claims 6 or 7, wherein 20S proteasomes which have been isolated by the method according to Claim 4 are used in said assay.
9. A method of identifying a fungicide comprising identifying said fungicide with 20S proteasomes..
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10. A fungicide, said fungicide comprising an inhibitor of the 26S and/or the 20S proteasomes.
11. A method for controlling fungi comprising controlling said fungi with an inhibitor of the 26S and/or the 20S proteasomes.
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